16th ANS Topical Meeting on the Technology of Fusion Energy,

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The 16th Topical meeting on the Technology of Fusion Energy (TOFE) was held September 14-16, 2004 at the Monona Terrace Community & Convention Center, Madison, Wisconsin. The General Chairman was Professor Gerald Kulcinski from the University of Wisconsin (UW) and the Vice Chairman was Dr. Masahiro Seki from the Japanese Atomic Energy Research Institute (JAERI). Dr. Laila El-Guebaly from the UW was the Technical Program Chair and she was assisted by Dr. Ichiro Yamamoto from Nagoya University and Dr. René Raffray from the University of California-San Diego (UCSD). Meeting sponsors included the Fusion Engineering Division (FED) of the American Nuclear Society (ANS), the Atomic Energy Society of Japan, the Fusion Technology Institute (FTI) of the University of Wisconsin, the Department of Energy, and the Wisconsin Local Section of the ANS. The Department of Energy (DOE), Naval Research Laboratory (NRL), General Atomics (GA), Sandia National Laboratory (SNL), Oak Ridge National Laboratory (ORNL), the Atomic Energy Society of Japan, AREVA, and the Fusion Technology Institute of the University of Wisconsin contributed additional financial support.

The number of registered participants was 209 distributed as follows: Austria (1), Belgium (2), Canada (1), Germany (7), France (1), Italy (1), Japan (44), Kazakhstan (2), Korea (1), Russia (2), United Kingdom (4), and the United States (143). There were 54 students registered and many more participated by helping with the organization and operation of the meeting. A total of 204 papers were given in three plenary session, 15 oral sessions and 2 poster sessions. The number of plenary presentations was 11, the number of oral presentations was 83 and there were 110 poster presentations. The Conference Proceedings were published in Fusion Science and Technology, Vol. 4, No. 3 (April 2005) & No. 4 (May, 2005), pp. 277-1306.

Dr. Harrison Schmitt from New Mexico, former Apollo 17 Astronaut and Senator, gave the keynote speech. His theme was "Large Energy Development Projects: Lessons Learned from Space and Politics". He discussed the keys to success in the successful Apollo program to land a man on the Moon and he compared them to what is needed for a successful energy development program. Following the keynote speech, Dr. Anne Davies (DOE) summarized the US National Magnetic Fusion Energy (MFE) program. Dr. Chris Keane (DOE) then summarized the US Inertial Confinement Program and Dr. Seki (JAERI) gave an overview of the recent activities in Japanese fusion technology program.

After the plenary session there were three parallel session on: 1) Engineering of Experimental Devices, 2) High Average Power Laser Program, and 3) Socioeconomics, Safety, Radwaste, and Licensing. The afternoon of the first day started with 56 poster papers presented on six different topics. This session was followed by 3 more parallel oral sessions on: 1) Power Plant Studies, 2) ITER Test Blanket Modules, and 3) Non-Electric Applications.

There was a reception on the first night and one of the highlights was the presentation of the first "Senior Statesman of the Fusion Program" to Dr. Steve Dean of Fusion Power Associates.

The second day started with a plenary session on the Development of Fusion and Near Term Facilities. Dr. Steve Dean gave a comprehensive Historical Perspective on the US Fusion Program followed by an extensive summary of the National Ignition Facility (NIF) by Craig Wuest (LLNL) and a summary of the European Technology Program by Dr. Roberto Andreani (EFDA-Garching). The plenary session was followed by three parallel oral sessions: 1) ARIES Power Plant Studies, 2) Target Development and IFE Technology, and 3) Latest Fusion Technology and Tritium Systems. There were 54 more poster papers in the afternoon followed by another three parallel oral sessions: 1) US Contributions to ITER, 2) Breeding Blanket Developments, and 3) IFE Designs and Technology.

At the banquet on the second day, several awards were given. First, the award for the best student work presented at the 16th TOFE went to Devesh Ranjan and John Neiderhaus (UW) for their joint paper "Investigation of Hydrodynamic Instabilities in Shock-Accelerated Flows for ICF". This honor also included a $500 check. Dr. Najmabadi of UCSD, the Chairman of the FED Honors and Awards committee, also awarded three honors. The Technical Program chairperson for the 16th TOFE meeting, Dr. Laila El-Guebaly was also honored for her extraordinary effort in making this meeting a success.

The final day of the meeting began with three parallel oral session: 1) Materials Development, 2) High Heat Flux Components, and 3) Nuclear Technology Experiments and Testing. An especially lively plenary session was held at the close of the meeting. The ITER project was described by three experts; Dr. Barabaschi of the International ITER team, Dr. Ned Sauthoff, the US Project Manager, and Dr. Charles Baker, the Director of the US Virtual Technology Laboratory. The "top to bottom" review of the ITER project elicited many comments from the audience and ended the meeting on a high technical note.

The plenary and oral presentations have been posted at the TOFE website: http://fti.neep.wisc.edu/tofe. Click on the title to download the presentation in PDF format. Hundreds of photos taken for the meeting attendees have also been posted on the TOFE website to download and print.

Finally, the organizing committee for the meeting was:

General Chair	Gerald Kulcinski (UW)
Vice Chair	Masahiro Seki (JAERI)
Technical Program Chair	Laila El-Guebaly (UW)
Assistant Tech. Prg. Chairs	Ichiro Yamaoto (NagoyaU)

	René Raffray (UCSD)
Finance Chair	James Blanchard (UW)
Publications Chair	Mohamed Sawan (UW)
Registration Chair	Mark Anderson (UW)
Student Awards	Paul Wilson (UW)
Technical and Spouse Tours	John Santarius (UW)
	Joan LePain (UW)
Publicity and Webpage	Dennis Bruggink (UW)